

INFORMATION SHEET

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2010-XXXX
FOR COUNTY OF KERN
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
ARVIN SANITARY LANDFILL
KERN COUNTY

The County of Kern (Discharger) owns and maintains the Arvin Sanitary Landfill about five miles west of the City of Arvin. The facility is currently regulated by Waste Discharge Requirements Order No. 5-00-023. The 170-acre facility contains one 128-acre waste management unit (Unit) that accepted municipal solid waste until 30 June 2003. This order revises the existing Waste Discharge Requirements to provide for the construction of a final cover, regulate post-closure maintenance of the Unit, and regulate corrective action for groundwater degradation.

The Unit is located on the floor of the San Joaquin Valley in the Kern Lake bed southwest of Bakersfield. The climate is semi-arid, with hot, dry summers and cool winters. The average annual precipitation is 8.2 inches, with an annual average pan evaporation of 60.6 inches. The site is within a 100-year floodplain according to FEMA maps.

The facility is in an area of known seismic activity. The Maximum Probable Earthquake is derived from a historic event of magnitude 7.7 that occurred in 1952 along the White Wolf Fault. The expected peak ground acceleration produced from this event is 0.44g. The site is not within a known fault hazard zone.

The Discharger adequately demonstrated that construction of a Title 27 prescriptive standard cover would be unreasonable and unnecessarily burdensome when compared to the proposed engineered alternative design. There is no clay source on-site or nearby and the cost of importing clay from off-site or mixing on-site soils with bentonite would cost substantially more than the alternative design. The Discharger demonstrated that an evapotranspirative cover utilizing soil from a nearby borrow source would be an appropriate engineered alternative to the prescriptive design. This Order requires the Discharger to install a pan lysimeter(s) beneath the final cover for the long-term monitoring of cover integrity.

An abandoned non-hazardous oil field waste processing facility, formerly operated by VenVirotek, is on a five-acre parcel within the southwest corner of the waste management facility property. Waste Discharge Requirements Order No. 92-199 was adopted naming both VenVirotek and Kern County as co-dischargers for the waste processing facility. An estimated 100,000 cubic yards

of processed waste material (VenVirotek material) containing volatile and semi-volatile organic compounds, metals, and other inorganic compounds remain. The County of Kern intends to move the VenVirotek material to the Arvin Landfill and place it above the existing interim soil cover and beneath the final cover in accordance with a Removal Action Workplan approved by the Department of Toxic Substances Control.

This Order provides a time period of 30 months after the Removal Action Workplan is approved to construct the final cover. This amount of time is required to allow the Discharger, a government entity, to include the project in a fiscal budget; process and place the VenVirotek material; and construct a 128-acre final cover.

Surface drainage is toward the Kern Lake Bed in the Kern Delta Hydrologic Area (557.10) of the Tulare Lake Basin. There are fifteen irrigation wells within one mile of the facility. Land within 1,000 feet of the facility is used for aquaculture, cultivated crops, or is vacant land.

The first encountered areal groundwater is approximately 60 to 85 feet below the native ground surface. Groundwater elevations range from 279 to 287 feet above mean sea level. Monitoring data indicate that the groundwater is unconfined. The depth to groundwater fluctuates seasonally by as much as 11 feet. Monitoring data indicate spatial variability in background groundwater quality. Groundwater from the lower portion of the aquifer tends to have lower specific electrical conductivity (EC) and lower concentrations of total dissolved solids (TDS). Background groundwater EC ranges between 414 and 5,240 micromhos per centimeter, with TDS ranges between 214 and 4,800 milligrams per liter.

The groundwater detection monitoring system, initiated in September 1987, currently consists of 13 monitoring wells. Monitoring wells AR1-06, AR1-21, AR1-22, and AR1-25 are used to collect background water quality data. Monitoring wells AR1-05, AR1-23, AR1-24, AR1-26, AR1-27, and AR1-28 are used to collect water quality data on the point of compliance.

Volatile organic compounds are often detected in a release from a landfill, and are the primary waste constituents detected in groundwater beneath a municipal solid waste landfill. Since volatile organic compounds are not naturally occurring, and thus have no background value, they are not amenable to the statistical analysis procedures contained in Title 27 for the determination of a release of wastes from a Unit. Title 27 does provide for the non-statistical evaluation of monitoring data that will provide the best assurance of the earliest possible

detection of a release from a Unit. However, Title 27 does not specify a specific method for non-statistical evaluation of monitoring data.

The Central Valley Water Board may specify a non-statistical data analysis method pursuant to Section 20080(a)(1) of Title 27. In order to provide the best assurance of the earliest possible detection of a release of non-naturally occurring waste constituents from a Unit, this Order specifies a non-statistical method for the evaluation of monitoring data.

The specified non-statistical method for evaluation of monitoring data in this Order provides two criteria (or triggers) for making the determination that there has been a release of waste constituents from a Unit. The presence of two waste constituents above their respective method detection limit (MDL), or one waste constituent detected above its practical quantitation limit (PQL), indicates that a release of waste from a Unit has occurred. Following an indication of a release, verification testing will be conducted to determine whether there has been a release from the Unit, or there is a source of the detected constituents other than the landfill, or the detection was a false detection. Although the detection of one waste constituent above its MDL is sufficient to provide for the earliest possible detection of a release in accordance with Title 27, the detection of two waste constituents above the MDL as a trigger is appropriate due to the higher risk of false-positive analytical results and the corresponding increase in sampling and analytical expenses from the use of detecting one waste constituent above its MDL as a trigger.

Organic compounds that are not naturally occurring have been detected in groundwater along the point of compliance. The following organic compounds have been regularly detected in compliance well samples at concentrations above water quality objectives (primary Maximum Contaminant Level): 1,1-dichloroethane (1,1-DCA), tetrachloroethene (PCE), trichloroethene (TCE), and vinyl chloride. Other constituents regularly detected in compliance well samples at concentrations below Maximum Contaminant Levels include: 1,1-dichloroethene (1,1-DCE), 1,2-dichloropropane, benzene, chloromethane, cis-1,2-dichloroethene, dichlorodifluoromethane (Freon 12), dichlorofluoromethane, and di-isopropyl ether (DIPE).

The nature of the release was demonstrated to be volatile organic compounds that originated from landfill gas. The extent of the release plume is limited to the shallow groundwater zone. The plume extends laterally approximately 800 feet from the Unit to the south and does not occur beyond the boundaries of the waste management facility property.

The Discharger completed an Engineering Feasibility Study in accordance with Section 20425(c) of Title 27. The Engineering Feasibility Study concluded that the most technically and economically feasible corrective action alternative is monitored natural attenuation in conjunction with landfill gas extraction. This Order requires the Discharger to maintain the integrity and effectiveness of containment structures as necessary to correct the effects of settlement, erosion, and other adverse factors and maintain groundwater and leachate monitoring throughout the post-closure maintenance period of the Unit. Additionally, the proposed corrective action program will monitor the waste constituent plume in the groundwater to determine whether its concentrations remain static, are reducing, or are expanding.

The provisions of Title 27 require that waste be contained to protect the beneficial uses water resources and to remediate any release of waste constituents to groundwater or surface water. This Order does not allow degradation of groundwater or surface water. Therefore, further antidegradation analysis is not needed.

On 9 October 1991, the United States Environmental Protection Agency (USEPA) promulgated regulations (Title 40, Code of Federal Regulations, Parts 257 and 258, "federal municipal solid waste [MSW] regulations" or "Subtitle D") that apply, in California, to dischargers who own or operate Class II or Class III landfill units at which municipal solid waste is discharged. The majority of the federal MSW regulations became effective on the "Federal Deadline," which was on 9 October 1993. With the issuance of Resolution No. 93-62, the State Water Resources Control Board established a statewide policy for the regulation of discharges of municipal solid wastes consistent with Subtitle D. Following the issuance of Resolution No. 93-62, the USEPA deemed the State of California to be an approved state, meaning that compliance with the applicable state regulations constitutes compliance with the corresponding portions of the federal Subtitle D regulations. These requirements are consistent with Resolution No. 93-62 and Subtitle D, and implement the appropriate state regulations in lieu of Subtitle D. The Discharger also needs to comply with all applicable provisions of Subtitle D that are not implemented through compliance with this Order or Title 27.

The action to revise waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resource Code §21000, et seq., and the CEQA guidelines, in accordance with Title 14, CCR, §15301. Revision of the waste discharge requirements updates them to conform with the California Water Code and Title 27, California Code of Regulations, §20005 et seq.

REH: 20 May 2010